

NATURAL RESOURCES CONSERVATION SERVICE

VIRGINIA CONSERVATION PRACTICE STANDARD

WETLAND ENHANCEMENT

(Acre)

Code 659

DEFINITION

The modification or rehabilitation of an existing or degraded wetland, where specific functions and/or values are modified for the purpose of meeting specific project objectives. Some functions may remain unchanged while others may be degraded.

PURPOSE

To modify the hydrologic condition, hydrophytic plant communities, and/or other biological habitat components of a wetland for the purpose of favoring specific wetland functions or values. Examples of this include managing site hydrology for waterfowl, shorebirds, or amphibian use, establishing native wetland vegetation in a site with a limited seed source, or applying prescribed fire to maintain a vegetative stage.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies on any degraded or existing wetland where the objective is to specifically enhance a selected wetland function(s) and/or value(s).

Enhancement should not significantly change the primary wetland functions already provided at the site.

Upon completion of the enhancement, the site will meet the current NRCS soils, hydrology, and vegetation criteria of a Wetland.

This practice does not apply to Virginia Conservation Practice Standards *Constructed Wetland* (Code 656), intended to treat point and

nonpoint sources of water pollution; *Wetland Restoration* (Code 657), intended to rehabilitate a degraded wetland where the soils, hydrology, vegetative community, and biological habitat are returned to original conditions; or *Wetland Creation* (Code 658), for creating a wetland on a site location which historically was not a wetland or on a site which was formerly a wetland but will be replaced with a wetland type not naturally occurring on the site.

CRITERIA

GENERAL

The landowner shall obtain necessary local, state, and federal permits that apply before wetland enhancement.

Water rights are to be assured prior to enhancement, if required.

The design will not back water on neighboring land without an easement.

The potential for occurrence of Threatened or Endangered Species (T & E Species) shall be evaluated for each site proposed for enhancement using the Virginia T & E Species procedure (See Section I of the NRCS, Virginia Field Office Technical Guide). Sites containing threatened or endangered species will not be enhanced under this standard unless it can be demonstrated that the impact will benefit the species at risk. Consultation with the appropriate regulatory agency or agencies is required.

Establish/maintain vegetative buffers on surrounding uplands to reduce sediment and

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

soluble and sediment-attached substances carried by runoff and/or wind. Buffers are also required to maintain function of a complete biological system.

If the presence of hazardous waste materials in the sediment or fill is suspected, soil samples will be collected and analyzed for the presence of hazardous waste as defined by local, state, or federal authorities. Sites containing hazardous waste will not be enhanced under this standard.

HYDROLOGY ENHANCEMENT

Where needed, the hydrology of the site (defined by the rate and timing of inflow and outflow and source, duration, frequency, and depth of flooding, ponding or saturation) is modified to meet the project objectives. An adequate source of water must be available to meet designs for increased hydrology.

The Virginia Conservation Practice Standards *Wetland Creation (Code 658)*, *Pond (Code 378)*, *Dike (Code 356)*, and *Structure for Water Control (Code 587)* will be used as appropriate. Refer to the Engineering Field Manual, Chapter 11, "Ponds and Reservoirs", Chapter 13, "Wetland Restoration, Enhancement, and Creation", and Chapter 6, "Structures", for additional design information. Existing drainage systems will be utilized, removed, or modified as needed to achieve the intended purpose. See the Virginia Conservation Practice Standard *Wetland Restoration (Code 657)* for specifics relating to drainage modification.

VEGETATION ENHANCEMENT

Native plant materials shall be used on any planned embankments and within the wetland limits. Borrow areas will be stabilized with a mix of any of the native warm season grasses noted in species mix #42 of the *Plant Establishment Guide for Virginia*. An acceptable alternative is an orchard grass-ladino clover mix at the rates noted in the *Plant Establishment Guide for Virginia (Mix #44)*.

When using native species, preference shall be given to native wetland plants with localized genetic material. Plant materials collected or grown from material collected within a 200-mile radius from the site is considered local.

In soils where seed banks realistically exist, or where natural colonization of targeted species will dominate within 5 years, then natural regeneration can be allowed.

Adequate substrate material and site preparation necessary for proper establishment of the selected plant species shall be included in the design.

WETLAND FUNCTIONS

A functional assessment or evaluation shall be performed on the site prior to enhancement to document net impacts to a range of functions. At a minimum, hydrology, biogeochemical, and habitat functions will be evaluated.

Project goals and objectives shall minimize adverse impacts to wetland functions not specifically targeted for enhancement.

Where possible, wetland functions not targeted for enhancement should also be maximized.

PERMIT AND ENVIRONMENTAL REQUIREMENTS

Nationwide Permit 27 (Under Section 404 of the Clean Water Act) authorizes certain activities relating to wetland enhancement. However, other activities, especially if a natural wetland is converted to another use or streams are impacted, may require state and/or federal wetland permits. Consultation with the Corps of Engineers and Virginia Department of Environmental Quality is required as part of any wetland enhancement planning process.

An environmental evaluation using Form VA-EE-1 shall be completed prior to practice installation.

CONSIDERATIONS

Consider existing wetland functions and/or values that may be adversely impacted.

Consider effect of volumes and rates of runoff, infiltration, evaporation, and transpiration on the water budget.

Consider the potential for a change in rates of plant growth and transpiration because of changes in the volume of available soil water.

Consider effects on downstream flows or aquifers that would affect other water uses or users.

Consider effects on wetlands or water-related resources and wildlife habitats that would be associated with the practice.

Consider linking wetlands by corridors wherever appropriate to enhance the wetland's use and colonization by the flora and fauna.

Consider establishing vegetative buffers on surrounding uplands to reduce sediment and soluble and sediment-attached substance carried by runoff and/or wind.

The nutrient and pesticide tolerance of the species planned should be considered where known nutrient and pesticide contamination exists.

Consider effects on temperature of water resources to prevent undesired effects on aquatic and wildlife communities.

Consider the effects of nearby populations of nuisance/invasive plants and animals.

and feasible.

- Establish timing and water control levels required for the maintenance of desired hydrologic conditions, management of vegetation, and for optimum wildlife use.
- Establish a damage assessment inspection schedule for embankments and structures.
- Develop a management plan to maintain vegetation, including control of unwanted vegetation.
- Use haying and livestock grazing only where necessary to enhance habitat for rare, threatened or endangered species (e.g., Bog Turtle). The Virginia Department of Natural Heritage or Department of Game and Inland Fisheries will be requested to provide a management plan for grazing, haying, or burning.

PLANS AND SPECIFICATIONS

Specifications for this practice shall be prepared for each site. Specifications shall be recorded using approved specification sheets or other documentation. Requirements for the operation and maintenance of the practice shall be incorporated into site specifications.

Document the soil, hydrology, and vegetative characteristics of the site and its contributing watershed before alteration.

OPERATION AND MAINTENANCE

The following actions shall be carried out to ensure that this practice functions as intended throughout its expected life. These actions include normal repetitive activities in the application and use of the practice (operation), and repair and upkeep of the practice (maintenance):

- Any use of fertilizers, mechanical treatments, prescribed burning, pesticides and other chemicals to assure the wetland enhancement function shall not compromise the intended purpose.
- Biological control of undesirable plant species and pests (e.g., using predator or parasitic species) shall be implemented where available

REFERENCES

1. NRCS, Engineering Field Manual, Chapters 6, "Structures"; 13, "Wetland Restoration, Enhancement, or Creation"; and 11, "Ponds and Reservoirs".
2. NRCS, Virginia Field Office Technical Guide.
3. NRCS, *Plant Establishment Guide for Virginia*.
4. GM-190, Part 410, Compliance with NEPA, Subpart A, B, and C, VA Amendment 4. (Includes Form VA-EE-1).
5. 700 Series Construction Specifications.

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Approved Practice Narrative

(Acre)

CODE 659

659 D1 Wetland Enhancement: The wetland indicated on the plan map will be enhanced through the application of specific hydrology (wetness), vegetative and/or maintenance practice(s). Design, operation and maintenance plans will be provided.

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